BEFORE THE

Federal Communications Commission

WASHINGTON, D. C. 20554

equipment manufacturers agreed that the Commission's proposed time frames for channel bandwidth reduction are overly aggressive, that the innovative shared use proposal is unworkable, and that the proposed height/power limits based upon HAAT must be rejected. The overwhelming majority of comments also oppose the Commission's plan to reduce channel bandwidths to 5 kHz, favoring instead proposals to start with a reduction to 12.5 kHz bandwidth in both the VHF and UHF bands. Obviously, the Commission must rethink many of its proposals if it is to respond to the needs and concerns of those entities that actually use the private land mobile radio spectrum.

The Commission must make a special effort to meet the needs of public safety users. In the case of height/power limits and frequency coordination, this could mean establishing separate rules for public safety users as proposed in APCO's initial comments. However, there must be uniform rules for all private radio services with regard to bandwidth and related technical matters (other than implementation periods which can and should be longer for public safety). Separate rules for different services could lead to diverse, incompatible radio equipment for each radio service, eliminating manufacturing economies of scale and driving up equipment costs for all users. The importance of this issue cannot be overstated. Lack of market share for any particular product can lead to an order of magnitude difference in prices compared to products offering similar

features using other, perhaps inferior, technologies. Additionally, the high cost of minimal production runs for specialized equipment may result in important product lines being discontinued by manufacturers.

Many public safety agencies and organizations also commented on the difficult issue of radio service consolidation and frequency coordination. APCO continues to believe that each public safety radio service or pool must have a single frequency coordinator, regardless of how the Commission proceeds on the issue of consolidation. Furthermore, APCO is the only entity qualified to be the coordinator for radio services or pools in which all public safety agencies are eligible (such as the Local Government Service).

Finally, the Commission should reject out-of-hand the suggestion by the Association for Maximum Service Television ("MSTV") that the Commission terminate land mobile sharing of the 470-512 MHz band. These frequencies are used for critical public safety communications in major metropolitan areas that face severe shortages of radio spectrum for police, fire, emergency medical and other public safety communications operations. While spectrum refarming may alleviate some of these shortages, demand for public safety spectrum will continue to outstrip supply because of the ever increasing volume and sophistication of public safety

radio communication.[1/] Yet, MSTV would displace these critical, top priority public safety users in favor of assigning even more spectrum for television broadcasting, which is already a highly inefficient user of over 400 MHz of scarce radio spectrum.

I. CHANNEL BANDWIDTH AND RELATED ISSUES

There was general recognition from most parties filing comments that refarming could be accomplished only through some degree of bandwidth reduction. However, some, particularly smaller governmental agencies with severe budget problems, would like nothing better than to be left alone, especially those in rural areas that do not perceive current spectrum shortages. Their needs must also be considered in any bandwidth reduction plan, through extended implementation periods and other mechanisms. Nonetheless, APCO believes that a date certain for final change to new bandwidths in each private land mobile band must be fixed to ensure future expansion and provide for interoperability.

The FCC proposed in the Notice that both UHF and VHF channels be split within the next ten years to 5 kHz bandwidth. However, the only support for this proposal came from a small number of companies that have a vested interest in producing and marketing single side band 5 kHz equipment. The proposal was rejected by the Telecommunications Industry

---

[1/] See APCO Comments at 4-6.

Association (TIA) and all of the major manufacturers that currently provide radio equipment to public safety or other

coordinators.[2/] IMSA is concerned that full power operation on 12.5 kHz offsets in the 460-470 MHz band would cause interference with MED channels.[3/] APCO is confident, however, that interference could be prevented with careful frequency coordination, based on its experience coordinating 12.5 kHz spacing in the NPSPAC Regional Plans and, by waiver, in the 470-512 MHz band. APCO believes that its network of local frequency advisors, automated coordination system, and FCC database provide it with the tools to perform 12.5 kHz coordination.

In the VHF high band (150-170 MHz), APCO's initial Comments set forth a 12.5/6.25 kHz plan similar to LMCC's Option A, which was supported by the vast majority of other comments. Only a small minority backed LMCC's Option B which would postpone any mandatory channel splitting for ten years, and then go directly to a very narrow bandwidth of 6.25 kHz. Option B would unnecessarily delay spectrum relief needed now, especially in metropolitan areas, and would place undue reliance on untested very narrowband technology.

The American Association of Railroads ("AAR") set forth a third alternative for the VHF band, an offset overlay plan that allows for two overlapping 12.5 kHz channels within

---

[2/] See APCO Comments at 16-17.

[3/] Comments of IMSA, et al. at n.2

each 15 kHz of spectrum. AAR Comments at 27-30. This plan proposes that the FCC

> adopt and implement an offset channel plan specifying 12.5 kHz channels that are offset from the current VHF channels by 7.5 kHz. In other words, one channel 12.5 kHz wide would be created every 7.5 kHz, so that for every 15 kHz of spectrum there would be two channels.

APCO strongly supports AAR's basic proposal as it offers several distinct and major advantages over alternatives proposed by LMCC and others (including the proposal initially supported by APCO). First, and most importantly, it does not disrupt existing assignments as it preserves current channel centers. Second, it provides a structured two-phase approach to narrow bandwidths with a graceful migration path. Third, the use of offsets should allow for added improvement in adjacent channel protection. This should enable a more rapid transition while protecting existing equipment. Fourth, the plan would provide interoperability with federal systems operating with 12.5 kHz equipment. Finally, this proposal would provide some immediate relief by allowing introduction of new 12.5 kHz equipment using geographical separation (as with existing 15 kHz channels using 25/30 kHz equipment at 150 MHz, or 800 MHz NPSPAC 12.5 kHz channels using 25 kHz equipment).

Using the AAR plan, frequency coordinators should be permitted to introduce immediately new licensees using 12.5 kHz equipment, based upon mileage separation or coverage contour data. APCO understands that the geographic separation required between overlapping 12.5 kHz systems would be 18-20 miles in flat terrain to afford the same adjacent channel protection now enjoyed by 30 kHz equipment operating on 15 kHz centers at 10 miles separation in the

research this topic and provide further detailed information to the Commission. This plan provides the potential for immediate spectrum relief in the 150 MHz band in some areas of the country.[4/]

The Comments of Ericsson/GE ("EGE") require special response on several key points. EGE is in concert with the majority of those responding in opposing the FCC's channel splitting proposal. However, its objections are based primarily on the fact that it apparently believes TDMA is the ultimate answer for all radio systems. APCO does not agree. While it is true that under certain conditions TDMA could ultimately provide a 4-to-1 improvement in spectrum efficiency over existing assignments, this result is limited to those systems which are large enough to require that technology. The majority of users do not fall into this category.[5/]

Spectrum efficiency cannot be measured either by the number of radio paths or by the amount of information that can be transmitted in a given length of time over a measured amount of spectrum. Rather, true spectrum efficiency is

---

[4/] APCO also supports "implementation on demand" as proposed by the AAR, which provides an alternative to severe "cutoff" dates. AAR Comments at 31-32. APCO recognizes that this will place added responsibility on Frequency Coordinators. APCO is ready to meet this challenge.

[5/] As of June 1, there were 58,187 Part 90 licenses issued in the Public Safety Radio Services below 800 MHz (excluding the Special Emergency Radio Service) which had only a base station and fewer than 70 mobile/portable units. Of these, there were 47,691 which had 25 or fewer mobile/portable units.

better measured by the ability of a finite portion of the spectrum to accommodate the maximum number of users, in the most efficient and economical manner. In this regard channel splitting offers the opportunity to serve many small individual agencies in an independent manner, as opposed to TDMA, which does not. If channel splitting is accomplished in an orderly manner, and rules permit, multiple adjacent channels could be grouped to accommodate TDMA for a single entity, or individually assigned for other techniques to accommodate multiple users.

APCO's second and related concern with EGE's comments is its recommendation that digital technology be mandated for all users. APCO is keenly aware of the potential advantages of digital technology and, through its Project 25, is striving to create standards for digital communications. However, APCO cannot agree with EGE that digital technology should be mandated to the complete exclusion of analog systems and equipment. While there is a dramatic shortage of channels in major metropolitan areas, there still remain numerous rural portions of the nation where population is light and the requirement for channels is much reduced. These areas could continue to operate with less expensive analog systems and existing equipment for many years. Rules should not be adopted which will result in economic hardship caused by equipment replacement when no

ARCO's initial comments also addressed the issue of

other radio services, but are generally not applicable for public safety. Such procedures may provide a general guide, particularly for rural public safety systems, but their implementation should be left to the appropriate frequency coordinator.

III. RADIO SERVICE CONSOLIDATION AND FREQUENCY COORDINATION

APCO's initial comments indicated general support for maintaining the six discrete public safety radio services (Fire, Police, Emergency Medical, Forestry Conservation, Local Government and Highway Safety), and suggested that newly created channels remain in the same radio service or be allocated to the Local Government service, in which all public safety entities are eligible. APCO also acknowledged that the current system has had certain negative effects that could be alleviated through some degree of radio service consolidation. APCO explained, however, that consolidation would be viable only if there were a single frequency coordinator for the consolidated service and procedures are adopted to accommodate the unique needs of different public safety users.

The other public safety frequency coordinators (IMSA/IAFC, AASHTO, and FCCA) filed joint comments (as the "Public Safety Communications Council") that strongly oppose elimination of the discrete radio services that they

coordinate.[9/] APCO understands and supports their view that the current system protects the special needs of each radio service. However, APCO also believes that there are other procedures that could protect the needs of different types of public safety users should service consolidation occur.

IMSA/IAFC, AASHTO, and FCCA also recommend that new channels created from channel splits be placed in a new public safety pool and that it be combined with the current Local Government service. APCO has no objection to that

treated equally in the coordination process. The same is true of the 800 MHz Public Safety channels that APCO coordinates for the benefit of all public safety agencies.

The success of the Local Government service would be completely undermined if it were subject to multiple entity coordination. The model for what would occur is the 453-458 MHz channels that are available for sharing by any public safety service but, unlike the Local Government channels, are coordinated by each of the public safety coordinators. Each coordinator must obtain the concurrence of the others prior to recommending a channel assignment to the FCC. The result, unfortunately, is slow application processing, the lack of a common data base, and the refusal by one coordinator, AASHTO, to grant its concurrences until it receives extra fees from applicants. This adds both time and cost to the frequency coordination procedures. The same, or worse, would occur in the Local Government Service if it were subjected to such unnecessary layers of coordination bureaucracy.

Rather than changing the Local Government Service, the Commission should use it as a model should it decide to consolidate the public safety radio services. Certifying a single coordinator that is representative of all public safety services would avoid the need to obtain concurrences from each coordinator, assure that there will be a common database, and take advantage of economies of scale to provide coordination at lower costs.

The advantage of having APCO as the only coordinator for public safety pools in which all public safety entities are eligible (such as the 800 Public Safety pools and the Local Government Service) is that APCO is the only coordinator with a broad based membership that includes all elements of public safety communications. APCO also has the advantage of having a network of local frequency advisors who are familiar with local spectrum usage and the peculiarities of local terrain and signal propagation. APCO has developed its own highly sophisticated automated coordination system (including its own software programs), and APCO has been at the forefront of electronic filing, which will dramatically reduce application processing time and enhance database accuracy. APCO's size and efficiency has allowed it to maintain one of the lowest overall fee schedules of any public safety coordinator. APCO is also the only public safety coordinator that does not rely upon an outside contractor. The Inspector General's recent audit of frequency coordination fees noted that APCO's decision to eliminate reliance on an outside contractor would result in significant savings that could reduce frequency coordination fees, and recommended that other coordinators explore similar actions.[10/]

[10/] FCC Office of Inspector General, Audit Report, User Fees for Frequency Coordination Services (July 15, 1992) at 10 and 12.

APCO already coordinates the majority of the public safety applications filed with the Commission each year,[11/] and is the certified coordinator for 82% of all channels allocated for public safety.[12/] PSCC attempts to suggest otherwise by claiming that a majority of public safety licensees are in services that its members coordinate. However, under PSCC's criteria, a small licensee with one lightly used channel has the same weight as a large municipality, county or state with dozens of channels and thousands of units. Weighing frequency coordination activity or responsibility should be based on the number of actions performed annually and the number of stations and units licensed. Under these criteria, APCO is responsible for coordinating the use of far more channels and many more stations and units than all other public safety coordinators combined. This is not to diminish the important contributions of the other coordinators, but, rather, to correct a misconception created by their comments.

[11/] The FCC has informed APCO that it received the following number of applications for each of the public safety services during the period from July 1, 1992, to June 30, 1993: Fire, 1,785; Highway Safety, 680; Forestry Conservation, 763; Police, 1,790; Local Government, 3,011; 800 MHz Public Safety, 4,203. APCO coordinated 74% (9,004) of these applications.

[12/] There are 1144 Public Safety channels (excluding the 470-512 MHz band), 940 of which are coordinated by APCO. APCO coordinates 449 channels in the 800 MHz bands (for which APCO is the only public safety coordinator) and 491 of the 695 Public Safety channels below 470 MHz.

As explained above, each pool or service of public

safety frequencies must have a single coordinator, and APCO

of state agencies and others for wide area channel assignments.

CONCLUSION

Therefore, as discussed above and in its initial comments, APCO urges the Commission to proceed with spectrum refarming, but to do so in a manner and at a pace necessary to protect and serve the special needs of public safety communications.

Respectfully submitted,

ASSOCIATED PUBLIC-SAFETY
COMMUNICATIONS OFFICERS, INC.

By: Ronnie Rand
Ronnie Rand
Executive Director

Of Counsel:

John D. Lane
Robert M. Gurss
WILKES, ARTIS, HEDRICK & LANE,
Chartered
1666 K Street, N.W.
Suite 1100
Washington, D.C. 20006
(202) 457-7800

July 30, 1993